ELECTRIC CONNECTOR

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a connector, and more particularly to an electric connector that is durable and has an excellent electrical conductivity and a desirable production rate.

2. Description of Related Art

U.S. Pat. No. 6,935,906 discloses a conventional electric connector having an insulative housing, a plurality of probe contacts and a plurality of terminals. The probe contacts are mounted in the insulative housing in an inclined arrangement and each probe contact has a rear portion and a plating such as gold. The rear portion has a rear end. The terminals are mounted in the insulative housing, are inclined relative to the probe contacts and respectively hold the probe contacts. Each terminal has a ring mounted around the rear portion of one probe contact. When the electric connector is assembled, the ring slides longitudinally onto the rear portion from the rear end of the probe contact.

However, the terminal with the ring is structurally complicated so that manufacturing the terminal is difficult and time-consuming. Furthermore, the inclined arrangement of the probe contacts increases the difficulty to fabricate the electric connector. Moreover, sliding the ring of the terminal onto the rear portion of the probe contact during the assembly of the electric connector easily wears the plating and reduces the electrical conductivity of the probe contact. Therefore, the production rate and the quality of the conventional electric connector are poor and disappointing.

To overcome the shortcomings, the present invention provides an electric connector to mitigate or obviate the aforementioned problems.

SUMMARY OF THE INVENTION

The main objective of the invention is to provide an electric connector that is durable and has an excellent electrical conductivity and a desirable production rate.

An electric connector in accordance with the present invention comprises an insulative housing, a plurality of probe contacts and a plurality of terminals. The insulative housing has a plurality of mounting holes and a plurality of mounting slots. The mounting slots communicate respectively with and are perpendicularly to the mounting slots. The probe contacts are mounted respectively in the mounting holes. The terminals are mounted respectively in the mounting slots and respectively hold the probe contacts and each terminal has a fastening portion. The fastening portion is perpendicularly to and securely holds one probe contact. The terminal with the fastening portion is mounted perpendicularly on the probe contact instead of sliding longitudinally along the tubular body. Therefore, the terminal would not wear the probe contact.

Other objectives, advantages and novel features of the invention will become more apparent from the following detailed description when taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a perspective view of an electrical connector in accordance with the present invention;

FIG. **2** is a partially exploded perspective of the electric connector in FIG. **1**;

FIG. **3** is a cross sectional perspective view of the insulative housing of the electric connector in FIG. **1**;

FIG. **4** is an exploded perspective view of the probe contact of the electric connector in FIG. **1**;

FIG. **5**A is a perspective view of a first variant of the terminal of the electric connector in FIG. **1**;

FIG. **5**B is a perspective view of the first variant of the terminal of the electric connector in FIG. **5**A further having a slit;

FIG. **5**C is a perspective view of the first variant of the terminal of the electric connector in FIG. **5**A further having a slit and a pair of cutouts;

FIG. **6**A is a perspective view of a second variant of the terminal of the electric connector in FIG. **1**;

FIG. **6**B is a perspective view of the second variant of the terminal of the electric connector in FIG. **6**A further having a slit; and

FIG. **6**C is a perspective view of the second variant of the terminal of the electric connector in FIG. **6**A further having a slit and a pair of cutouts.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference to FIGS. **1** and **2**, an electric connector (**100**) in accordance with the present invention comprises an insulative housing (**10**), a plurality of probe contacts (**20**) and a plurality of terminals (**30**).

With further reference to FIG. **3**, the insulative housing (**10**) has a front (**11**), a rear (**13**), a bottom (**14**), a plurality of mounting holes (**15**) and a plurality of mounting slots (**142**) and may further have pairs of mounting apertures (**141**).

The mounting holes (**15**) are defined longitudinally through the insulative housing (**10**) from the front (**11**) to the rear (**13**) and has a diameter.

The mounting slots (**142**) are defined in the bottom (**14**), correspond respectively to and communicate respectively with the mounting holes (**15**) and are perpendicularly to the mounting holes (**15**).

The pairs of the mounting apertures (**141**) correspond respectively to the mounting slots (**142**) and are defined in the bottom (**14**).

With further reference to FIG. **4**, the probe contacts (**20**) may be plated with a plating such as gold for improving conductivity, correspond respectively to and are mounted respectively in the mounting holes (**15**), correspond respectively to the mounting slots (**142**) and each probe contact (**20**) has a tubular body (**21**), a probe (**23**) and a spring (**22**).

The tubular body (**21**) is hollow, is made of metal, is mounted securely in a corresponding mounting hole (**15**) and has a closed end (**213**), an open end (**211**), a chamber (**210**), an outer annular flange (**215**) and an inner annular flange (**217**). The chamber (**210**) is defined longitudinally in the tubular body (**21**) and communicates with the open end (**211**). The closed end (**211**) is mounted in the corresponding mounting hole (**15**). The open end (**211**) is opposite to the closed end (**213**) and extends out of the corresponding mounting hole (**15**). The outer annular flange (**215**) is formed on and protrudes radially from the tubular body (**21**), abuts against the front (**11**) of the insulative housing (**10**) and has a diameter larger than that of the mounting hole (**15**). The inner annular flange (**217**) is formed on and protrudes radially from the tubular body (**21**), is mounted in a corresponding mounting slot (**142**) and has a diameter larger than that of the mounting hole (**15**).

The probe (**23**) is made of metal, is mounted slidably in the chamber (**210**) and extends out of the open end (**211**) of the